



Newsletter

Volume 14, Number 6
November - December 1997

Director's Note

Two important initiatives are introduced in this issue of the newsletter. While they may not appear similar at first glance, they share a theme: excellence in science.

In November, we announced the "Campaign for the Institute of Ecosystem Studies." Funds raised will reinforce our ability to do state-of-the-art science.

And, just a month earlier, IES was awarded two research grants for a long-term study of the Baltimore ecosystem. Long before it was popular to be interested in urban ecosystems, the Institute was developing programs to understand the relationships among humans, forests and cities. We also hosted an international Cary Conference on this topic in 1991. So we celebrate these new grants as an impressive recognition of an IES 'offspring', conceived, nurtured and now mature because of the initiative, skill and dedication of IES ecologists.

The IES Newsletter is published by the Institute of Ecosystem Studies, located at the Mary Flagler Cary Arboretum in Millbrook, New York.

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IES Campaign Goal: Even Stronger Science

To keep pace with the challenges of the coming decades, the Institute has embarked on a \$6 million *Campaign for the Institute of Ecosystem Studies*. Ms. Gretchen Long Glickman, chairman of the Institute's Board of Trustees, made this announcement at an Aldo Leopold Society event in November, highlighting the important work the Institute is doing in scientific research and education and outlining the goals of the campaign.

Under the direction of Dr. Gene E. Likens, the Institute has become one of the foremost ecological programs in the world. It was more than three decades ago that Dr. Likens and colleagues founded the ecological research program at the Hubbard Brook Experimental Forest in New Hampshire, an ongoing study that provides long-term data necessary to understand changes in northeastern forests. Now, Dr. Likens and fellow scientists at the Institute of Ecosystem Studies continue this tradition of excellence in science, studying the complex interrelationships between organisms and their environments to

better understand the natural world.

As newsletter readers are aware, innovative research by IES ecologists has brought significant discoveries. A team of investigators at the Institute has demonstrated the links between the forest ecosystem and Lyme disease. Our research efforts have documented the persistent and damaging effects of acid rain. International projects include successful efforts to restore Israel's Negev Desert to savanna, an IES collaboration that has become a model for other arid regions of the world. And introduced in this issue is an Institute project that is the first of its kind: a multi-disciplinary study of cities and suburbia as ecosystems. These are just a few of many IES projects whose findings have direct relevance to human well-being.

The *Campaign for the Institute of Ecosystem Studies* will reinforce the Institute's ability to sustain this excellence into the future. The campaign has two goals: to fund construction of a new research building adjacent to the south side of

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The announcement of the "Campaign for the Institute of Ecosystem Studies" coincided with the fall meeting of the Board of Trustees. Above: Ms. Gretchen Long Glickman, Chairman of the IES Board of Trustees, and Mr. Paul J. Ganci, IES Trustee and President and Chief Operating Officer of Central Hudson Gas and Electric Corporation.

IES Spearheads Baltimore Project

The city of Baltimore is about to add a new jewel to its crown. Not because of its beautiful harborfront, or its mouth-watering crab cakes, or for its professional sports. No, thanks to a federal grant to the Institute of Ecosystem Studies, Baltimore's new fame will grow as it becomes one of the most intensely studied urban areas on Earth.

Scientists, sociologists, educators and economists — 35 in all — are collaborating on a comprehensive study of Baltimore and the Chesapeake Bay region (map at right). The study, "Human Settlements as Ecosystems: Metropolitan Baltimore from 1797-2100" will examine the city and its environs as an ecological system, including physical, ecological and socio-economic components.

The project is one of 20 "long-term ecological research" (LTER) projects in the United States. Most of the LTER projects are in wild places, habitats including grasslands, deserts, lakes, forests and coastal zones scattered from Alaska to Antarctica. The Baltimore project and one in central Arizona are the only two that focus on urban environments. All projects are supported through grants from the National Science Foundation, an agency of the federal government. In addition, the Institute received a companion grant from the Environmental Protection Agency for the Baltimore project. Funding for the new urban sites began on November 1, 1997.

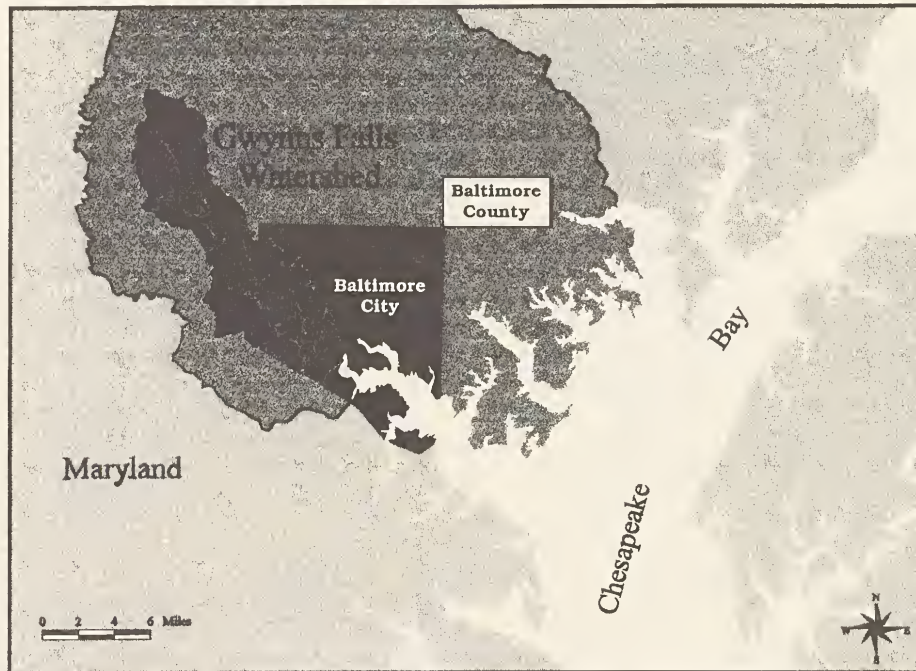
Why Baltimore? Dr. Steward T. A. Pickett, an ecologist at the Institute of Ecosystem Studies and project director of the Baltimore study, replies, "This project builds on a remarkable foundation of social science research, a long history of applying community forestry to issues of ecological health of the Baltimore metropolitan area and the Chesapeake Bay, and excellent relationships between the community and researchers in the area." In addition, the area is ecologically diverse and located at a critical land/sea interface, and within its boundaries are a number of small and medium-sized watersheds for study. Watersheds provide important practical and conceptual units for study.

The Baltimore LTER project will employ two research approaches to increase the ecological knowledge of urban ecosystems. First, social, cultural,

and economic processes, as well as the dynamics of the physical environment and civil infrastructure, will be linked with ecological processes to understand how urban areas function as integrated ecological systems. Second, since the specific features of this integrated ecological-social system change over time, a long-term perspective extend-

understanding with management, environmental quality and social issues in urban America.

In addition, education programs in the schools will be a major part of the Baltimore project. Teacher training and curriculum development will be coordinated by Dr. Alan R. Berkowitz,



The Baltimore Urban Long-Term Ecological Research project focuses on the city and county of Baltimore, and on its watershed.

ing back 200 years and projecting into the next century is needed. The socio-economic and ecological changes resulting from urbanization have cumulative effects, indirect effects, feedbacks, and time lags.

A long-term, integrative approach will allow documentation of the outcome of ecological experiments on the species composition of urban watersheds, and of community initiatives to revitalize neighborhoods. To complement these research approaches, public education and the application of ecological knowledge will play an integral role in linking scientific

IES head of education. Students and teachers from primary and secondary schools in Baltimore City and County and from the five local colleges and universities will do relevant research as part of their science, social studies, mathematics and technology programs of study, and an effort will be made to introduce children to career opportunities in environmental fields.

The Baltimore project will bring together investigators with a long history of involvement in the community. Scientists from the U.S.D.A. Forest Service, the University of Maryland

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IES Aquatic Ecology Day Camp

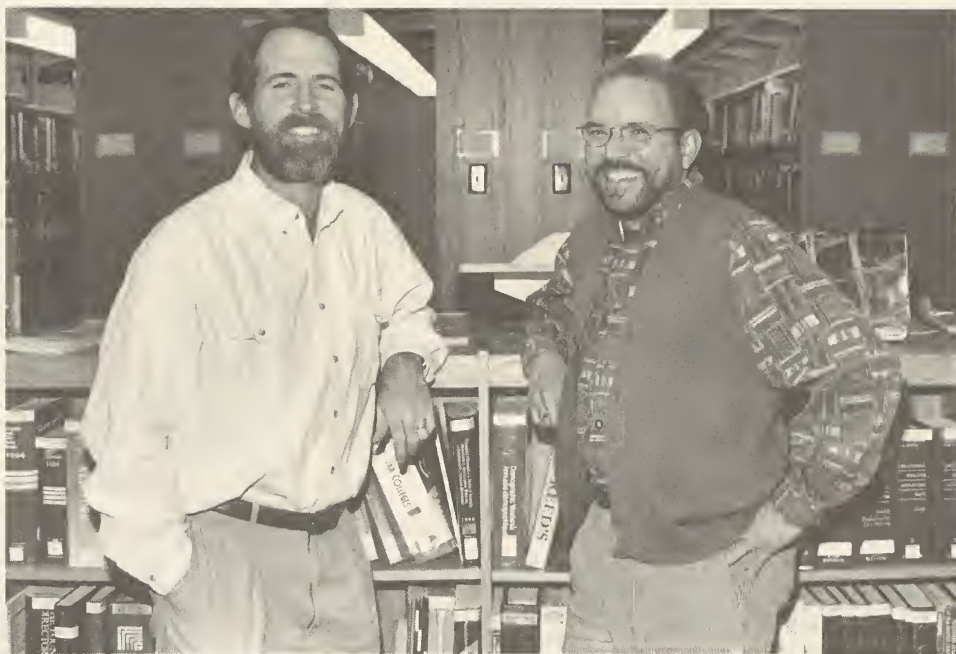
April 14-17

- Do you know a child interested in ponds, streams, rivers and lakes?
- Is this child in grades 4, 5 or 6?
- Would she or he love to be one of 12 apprentice ecologists, doing ecology explorations at IES?

If the answer to these questions is **Yes!**,
call the IES Education Office at **677-5359** for information.

Registration deadline: March 16

Institute Ecologists Honored



Dr. Charles Canham, left, and Dr. Steward Pickett

Dr. Charles Canham received the Ecological Society of America's George Mercer Award "for an outstanding paper in the science of Ecology during the year 1997". The paper, "Forest models defined by field measurements: Estimation, error analysis, and dynamics," published in *Ecological Monographs*, was co-authored by Drs. Stephen Pacala, John Saponara, John Silander, Richard Kobe (a former postdoctoral associate at IES) and Eric Ribbens.

Dr. Steward Pickett has been promoted to the rank of Senior Scientist. In making the announcement, Dr. Gene Likens cited Dr. Pickett's record of scientific achievement, which has brought distinction to the Institute. Dr. Pickett joined the IES staff in 1987 and was a co-founder of the Institute's urban-to-rural gradient ecosystem study. See page two for more on Dr. Pickett's work.

Baltimore, *continued*

and the Johns Hopkins University, among other institutions, will collaborate with colleagues from the Parks and People Foundation and educators from the Baltimore City and County Schools. Other collaborators, including Drs. Peter Groffman, Richard Pouyat, Patrick Bohlen and Gary Lovett from the Institute of Ecosystem Studies as well as scientists from a number of other U.S. institutions and from Canada, Chile, West Germany and Australia, will provide expertise on urban ecosystems.

The initial federal grant is for six years, with the potential for renewal for additional six-year periods. Products will include books and technical publications on urban ecosystems, a wealth of useful scientific and socioeconomic data cast in terms accessible to citizens and managers, thousands of engaged students and teachers, and a new understanding of all that comprises an urban ecosystem. Baltimore will have become a model for urban scholars and planners, and the Institute of Ecosystem Studies will have strengthened the foundation of the science of ecology, enhancing its value to people as the nation's metropolitan areas continue to grow.

For more information, find the Baltimore LTER project on the Internet at: <http://baltimore.umbc.edu/lter>

Stronger Science, *from page 1*

the Plant Science Building, and to endow the "G. Evelyn Hutchinson Chair." A new environmental research building will extend the Institute's research capabilities by providing modern space for the scientists and advanced laboratory technology necessary to do state-of-the-art science. The endowed G. Evelyn Hutchinson Chair, named in honor of one of the 20th century's most eminent ecologists, will enable the Institute to attract an outstanding senior ecologist to round out its scientific staff.

The Institute already has raised more than \$4.6 million toward its goal. Contributions and pledges include leadership gifts from private individuals, corporations and foundations, including the Mary Flagler Cary Charitable Trust, The Andrew W. Mellon Foundation, the Millbrook Tribute Garden Inc., the Robert W. Woodruff Foundation, Central Hudson Gas & Electric

Corporation, and Fiduciary Trust Company International.

Announcement of the campaign came at an evening reception attended by members of The Aldo Leopold Society, members of the IES Board of Trustees, and invited guests from the mid-Hudson Valley community. Following remarks by Ms. Glickman and Dr. Likens, renowned wildlife photographers Susan Middleton and David Liittschwager presented a photographic essay of North America's endangered species. Middleton and Liittschwager have won praise from the conservation community for their ability to capture the unique beauty of endangered species on film. Their plant and animal portraits, as seen in their impressive volume, *Witness*, and to be televised on an NBC *National Geographic Special* on January 24, highlight the splendor and grace of these endangered species.

Come to an Open House to celebrate the 25th Anniversary of the IES Greenhouse!

Sunday, February 8*, from 1:00 - 3:30 p.m. at the Greenhouse on Route 82
tours • activities for all ages • refreshments • and more...

Free • No reservation needed

* Weather date: February 22. If poor weather forces us to postpone the open house, an announcement will be broadcast on these radio stations:
WHUD (100.7 FM), WCZX (97.7 FM), WPDH (101.5 FM), WEOK (1390 AM), WKZE (1020 AM)



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CONTINUING EDUCATION

For a Winter/Spring 1998 catalogue and program information, call the Continuing Education office at 914/677-9643. Programs during January and February include:

Landscape Design

Jan. 17 (6 sessions): Principles of Landscape Design

Jan. 17 (4): Landscape Design II

Jan. 21 (3): Marketing and Estimating Landscape and Gardening Services

Jan. 22 (7): Graphics I

Jan. 24: The Natural Environment: The Designer's Inspiration

Gardening

Feb. 7: Ornamental Grasses in the Garden

Feb. 21: Outstanding Native Trees and Shrubs

Feb. 28: Establishing Native Wildflower Meadows

Natural Science Illustration

Feb. 9 (6): Drawing III

Feb. 28/Mar. 1: Scratchboard:

A Basic Introduction

Biology and Earth Science

Jan. 17: Buds and Bark:

Winter Tree Identification

Feb. 3 (8): Basic Botany

Workshops

Feb. 21: The Computer:

A Valuable Gardening Tool

Feb. 28: Careers in Horticulture

SUNDAY ECOLOGY PROGRAMS

Free public programs are offered on occasional Sundays. Call 914/677-5359 to confirm the day's topic or, in case of poor weather, to learn the status of the day's program. Meet at 2 p.m. at the Gifford House on Route 44A for:

Feb. 1: **Wetland Restoration**, a slide presentation for a general audience, led by Dr. Peter Groffman

Mar. 8: **Maple Sugar Ecology for Families**, led by Kris Desmarais and Tom Moorcroft. *Note: Reservations are required for this program, which has a limit of 30 participants. Call 677-5359.*

VOLUNTEER OPPORTUNITIES

For information on volunteering at IES, call Ms. Su Marcy at 914/677-5359.

Calendar

IES SEMINARS

Free scientific seminars are held each Friday at 11:00 a.m. at the IES Auditorium:

Jan. 16: **Responses of Stream Chemistry and Watershed Nutrient Export to Forest Insect Defoliation**. Mr. Gregory Lewis, Cornell Univ.

Jan. 23: **The Impact of Land-use Change on Nitrogen Dynamics in Arid Ecosystems**.

Dr. R. Dave Evans, Univ. of Arkansas

Jan. 30: **Impacts of Ambush-predator Dinoflagellates (*Pfiesteria*) on Estuarine Fisheries and Human Health**. Dr. JoAnn

Burkholder, North Carolina State Univ.

Feb. 6: **Fire, Nitrogen Availability and Plant Response in a Tall Grass Prairie**. Dr. John A. Blair, Kansas State Univ.

Feb. 13: **The Role of Rapid Evolution in Zooplankton Community Responses to Acidification**. Dr. Janet Fischer, Cornell Biological Field Station

Feb. 20: **Spatially Explicit Dynamics of the Interior Cedar-Hemlock Forests of British Columbia: Moving from Theory to Management**. Dr. Charles D. Canham, IES

Feb. 27: **Ecological Interactions Between Large Mammals, Small Mammals and Vegetation in a Tropical Savanna of Central Kenya**. Dr. Felicia Keesing, Siena College

GREENHOUSE

Feb. 8: **Open House at the Greenhouse**, to celebrate its 25th Anniversary —
see box on page 3...

The IES greenhouse is open until 3:30 p.m. daily except public holidays. Admission is by free permit (see "HOURS").

HOURS

Winter hours: October 1 - April 30

Closed on public holidays.

Public attractions are open Mon. - Sat., 9 a.m. - 4 p.m. & Sun. 1-4 p.m., with a free permit*.

The IES Ecology Shop is open Mon. - Fri., 11 a.m. - 4 p.m., Sat. 9 a.m. - 4 p.m. & Sun. 1-4 p.m. (The shop is closed weekdays from 1-1:30 p.m.)

* Free permits are required for visitors and are available at the IES Ecology Shop or the Education Program office daily until 3 p.m.

IES ECOLOGY SHOP

Closed for renovations from January 5-16
Jan. 20-25: **Grand Re-opening** — Take an extra 5% off all January sale prices (sorry: no discount on textbooks)

New in the Shop ... Hudson Valley Raptor Center T-shirts for adults and children, magnets and notecards ... **and in the Plant Room** ... soda bottle bird-feeder kits, birdhouses, tropical plants from the IES greenhouse

Senior Citizens Days: 10% off on Wednesdays

•• Gift Certificates are available ••

MEMBERSHIP

Join the Institute of Ecosystem Studies. Benefits include subscription to the newsletter, member's rate for courses and excursions, a 10% discount on IES Ecology Shop purchases, and participation in a reciprocal admissions program.

Individual membership: \$30; family membership: \$40. Call Ms. Janice Claiborne at 677-5343.

The Institute's Aldo Leopold Society
In addition to receiving the benefits listed above, members of The Aldo Leopold Society are invited guests at spring and fall IES science updates. Call Ms. Jan Mittan at 677-5343.

TO CONTACT IES...

... for research, graduate opportunities, library and administration:

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Millbrook NY 12545-0129

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Route 44A, Millbrook, N.Y.

... for education, general information and the IES Ecology Shop:

Institute of Ecosystem Studies
Education Program, Box R
Millbrook NY 12545-0178

Tel: 914/677-5359 • Fax: 914/677-6455

Street address: Gifford House Visitor and
Education Center, Route 44A, Millbrook, N.Y.

Note new internet address:

www.ecostudies.org